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1500-1900

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THOUSANDS

— OF —

TONS OF MONEY

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GOLD AND SILVER,
1500-1900

PAGES 2-3

Does Quantity of
Primary Money affect Prices ?

PAGES 4-17

GOLD SITUATION
IN 1900

WILL \$1,000,000,000 GOLD PRODUCTION
FOR 1897-1900 BE AMPLE ?

PAGES 18-32

WORLD'S PRODUCTION

YEARS.	GOLD.				
1493-1600	-	-	-	-	755
1601-1700	-	-	-	-	912
1701-1800	-	-	-	-	1,900
					<u>3,567</u>
1801-1810	178	}	-	-	<u>1,185</u>
1811-1820	114				
1821-1830	142				
1831-1840	203				
1841-1850	<u>548</u>				
					<u>4,752</u>
1851-1860	-	-	2,006	}	3,906
1861-1870	-	-	1,900		
					<u>8,658</u>
1871-1880	-	-	1,731	}	3,326
1881-1890	-	-	1,595		
1891-1900	-	-	<u>3,050</u>		
			<u>10,282</u>		<u>15,034</u>

IN METRIC TONS.

YEARS.	SILVER.			Tons Silver divided by 16.
1493-1600	-	-	22,834	1,427
1601-1700	-	-	37,234	2,327
1701-1800	-	-	57,035	3,565
			<u>117,103</u>	<u>7,319</u>
1801-1810	8941	}	-	<u>2,045</u>
1811-1820	5408			
1821-1830	4606			
1831-1840	5964			
1841-1850	<u>7804</u>			
			<u>149,826</u>	<u>9,364</u>
1851-1860	8,955	}	21,156	1,322
1861-1870	<u>12,201</u>			
				<u>10,686</u>
1871-1880	22,098	}	53,344	3,334
1881-1890	31,246			
1891-1900	<u>50,000</u>			
	<u>124,500</u>		<u>274,326</u>	<u>17,145</u>

The value of the total production of Gold and Silver, 1493-1870, is represented by 8,658 + 10,686 equivalent to 19,344 tons Gold.

DOES QUANTITY OF BASIC OR PRIMARY MONEY AFFECT PRICES ?

A careful consideration and decision of this question is required before any real progress in monetary reform can be expected. All the tables in this article consider both gold and silver as gold, sixteen tons of silver being taken as equal to one ton of gold. Coinage, jewelry, plate, etc., are included in the tables of "Total Stock" of gold and silver.

The New York Financier of August 30, 1897, Page 473, says: "Schoenhof in his 'History of Money and Prices,' proves conclusively that prices of commodities move in obedience to natural and inherent causes, independent of circulating money quantities."

On Page 32 of the work above referred to is found an estimate for 1848, of £280,000,000 of silver money in existence. This differs materially from Mulhall (page 209), who gives £388,000,000. If Mulhall is correct, Schoenhof's conclusion that "We have nearly two dollars of gold money in existence for every dollar of the two metals combined, circulating in 1848," needs modification.

The following table is prepared from the tables on pages 28 and 151 of Schoenhof's work.

ANNUAL AVERAGE IN METRIC TONS OF GOLD PRODUCTION, plus $\frac{1}{16}$ " " SILVER "			
YEARS.	TONS.	TONS.	INCREASE.
1601-1700		32 $\frac{4}{10}$	22 $\frac{4}{10}$ Tons or 69%
1701-1720	35	54 $\frac{8}{10}$	
1721-1740	46 $\frac{6}{10}$		
1741-1760	57 $\frac{9}{10}$		
1761-1780	61 $\frac{3}{10}$		
1781-1800	72 $\frac{7}{10}$		216 $\frac{8}{10}$ Tons or 345%
1801-1820	55	62 $\frac{8}{10}$	
1821-1840	50 $\frac{3}{10}$		
1841-1850	103 $\frac{5}{10}$		
1851-1860	256 $\frac{4}{10}$	279 $\frac{9}{10}$	
1861-1870	271 $\frac{2}{10}$		
1871-1880	311 $\frac{3}{10}$		

Schoenhof, comparing the eighteenth century with the seventeenth century, says on page 151: "The average output of gold was more than double, the output of silver more than 50 per cent. in excess of the seventeenth century, when the great price revolution is said to have occurred. The causes for a rise of prices on the money hypothesis, wanting in the seventeenth century certainly, were very ample in the beginning of the eighteenth, and continued to increase with its progress."

Page 152: "If ever, therefore, there was a time propitious for a great rise in prices, the first half of the eighteenth cen-

tury was. But, as we shall see, the very reverse happened. The only prices that had shown any formidable rise in the previous century were wheat and other cereals and live stock."

Let us see whether "the causes for a rise of prices" in the eighteenth century were ample.

Mulhall gives on page 306 the total stock of gold and silver, from which the following table is calculated:

STOCK				
TONS TOTAL GOLD, plus $\frac{1}{16}$ " " SILVER.				
YEAR.	TONS.	INCREASE.		
		TONS.	TONS per annum.	
1600	2267	1855	18½	82 % for 100 years
1700	4122			
1800	8230	4108	41	100 % " 100 "
1850	10684	2454	49	30 % " 50 "
1880	16862	6178	206	58 % " 30 "

Mulhall also gives the coined stock of gold and silver on page 310, from which the following table is made:

STOCK
TONS COINED GOLD,
plus $\frac{1}{16}$ " " SILVER,

YEAR.	TONS.	INCREASE.		
		TONS.	TONS per annum.	
1600	739	1204	12	163 % for 100 years
1700	1943			
1800	3533	1590	16	82 % " 100 "
1848	3950	417	9	12 % " 48 "
1880	9856	5906	184	149 % " 32 "

One table shows an increase of total stock of 82 per cent. for the seventeenth century and 100 per cent. for the eighteenth century. The last table shows an increase of coined stock of 163 per cent. for the seventeenth century and 82 per cent. for the eighteenth century. This marked difference between the tables is due to the fact that the value of the gold and silver taken for the arts in the eighteenth century, was several times that used in the seventeenth century.

One would think that Schoenhof, having observed that the causes for a rise were wanting in the seventeenth century, would not have claimed that the causes were ample in the

eighteenth century, if he had paused to more thoroughly study the facts.

The preceding table shows that coinage took 12 tons per annum in the seventeenth century, 16 tons per annum in the eighteenth century, and 184 tons per annum 1848-1880.

During the whole period from 1600 to 1850 the increase of total stock was seldom (if ever) as much as 1 per cent. per annum, which increase was certainly not excessive for any general growth of population and development.

The increase of total stock 1800-1850 was decidedly less than the increase of population. During this period there was a marked decline in prices. In fact, there was no production of notable importance (generally less than 60 or 70 tons per annum, both gold and silver being considered as gold) at any time prior to 1848, as compared with over 250 tons per annum after 1850.

We now come to a period when for the first time there was a production on a scale of any magnitude. The increase of production between 1848 and 1853 was sudden, being on the average some 20 per cent. per annum. Schoenhof says of this period:

Page 159—"We see the gold fields of California and Australia opened and a golden stream poured over Europe within 30 years equal to the product of the 250 years preceding 1850. But excepting periods of war, failure of crops, and scarcity, prices show a downward tendency. Wheat, 1849-52 is 40s. 11d. a quarter. During the period of the Crimean War (1853 to 1857) the average is 65s. 3d."

Sauerbeck's index of prices of forty-five commodities in London market was as follows:

1851	1852	1853	1854	1855-6
75	78	94	102	101

This remarkable increase in prices between 1851 and 1854 averaged about 10 per cent. per annum. The Crimean War (1854-1856) is no explanation for it. The only small crop I find recorded about this time is that of wheat (1854). A palpable and important cause for the increase of prices, was the great gold crop.

The flood of gold increased the coined stock of gold and silver 4 to 5 per cent. per annum 1851-1854, and a much larger percentage on the gold coinage alone. During this period the price of silver did not advance 2 per cent. in any year, and not quite 1 per cent. on the average. Prices of commodities advanced 8 points per annum, or about 10 per cent. per annum.

Jevons' investigation (made more than thirty years ago) led him to the conclusion that the permanent rise was due to the deeply seated cause of an alteration in the supplies of gold.

Schoenhof says:

Page 16—"The rise in wages is the absolute proof that the fall in the price of commodities is due to invention and science, to the most forcible application of mind to production the world has ever seen."

Page 171—"The price decline is quite natural, and easy of understanding, when we take into consideration the great

economies which have become practicable through the achievements in commerce, trade and manufactures."

"Prices of these commodities" (supplied through commerce from abroad) "are lower in the sixteenth than in the fifteenth century. They are lower in the seventeenth than in the sixteenth; lower in the eighteenth than in the seventeenth; and in the nineteenth century, barring years of war and speculative expansion, the consequence of wars and their effects, have made price records, which are, if not lower in the eighties than in the forties, certainly as low as before the great additions to the money supplies were made by the new discoveries."

Page 249—"The cheapening of production by scientific progress is nowhere else so apparent as in metallurgy. This applies to mining operations in all the branches."

Page 250—"The same scientific leveling process has operated on the cost of production in gold mining and silver mining, be it remembered, all the time, and a fiat of the State cannot make water run up from its source."

Pages 261 and 262—"The improvements in mining operations, and this applies to gold and silver production as well, if they do not outstrip, at least equal, those in all other branches of metallurgy."

A. correspondent from Johannesburg to the Economist says:

Page 262—"Working expenses have shrunk to such an extent: that whereas six years ago several ounces to the ton were necessary to make a mine pay, a profit is now in many cases obtainable with only five pennyweights."

Pages 306 and 307—"The numberless causes which operate on prices cannot all be dealt with. I have to content myself with treating only the leading ones. I have singled out such as are general and have had a very pronounced influence

in the past in keeping prices high, and as by their abolition or by radical changes in them, prices have become lower and lower until they have reached the phenomenally low range which causes so much agitation at the present time, the fact completes the demonstration that prices are the results of inherent causes and not of merely accidental ones, as the greater or smaller supply of the money stocks would be. It is true, prices have become extraordinarily low."

The above quotations, and many examples in Schoenhof's work, show that human labor is very much more effective than formerly, and the conclusion is hastily formed that this accounts for lower prices. The index number of price level has declined from 111 in 1873, to 61 in 1896, showing a decline of 45 per cent. The decline averaged 2 $\frac{3}{4}$ points, or 3 to 5 per cent. per annum. The quotations show that Schoenhof was aware that improvements had also cheapened the production of gold, and yet he did not perceive that if economies applied to gold, to just the same degree as to other commodities, the general level of prices might remain the same—provided the supply of gold was ample for the demands, and the profits made per ounce did not increase.

He notices the visible and immediate causes for changes in prices, but ignores the hidden and slower working one found in the supply of gold and silver.

Schoenhof gives instances of prices of some commodities advancing, and of other commodities falling, during the same time. These instances verify the soundness of the law of sup-

ply and demand as applied to each commodity, and is no argument against the level of prices.

The fact that gold (a reality, and valuable of itself) is used as a mechanism of exchange, does not deprive it as a commodity from being governed by the laws of supply and demand. There is a marked distinction between such a mechanism of exchange, and non-valuable ones, such as paper money, bank accounts, etc., etc. The latter, though practically of great use, are means for the transferring of the ownership of realities (commodities). Gold is a commodity of itself—one selected as a standard.

I have not been able to find any proof in Schoenhof's work that prices are independent of circulating money quantities. The pointing out of direct and temporary causes affecting individual commodities, is no proof that the supply of metallic money has no effect on the general plane of prices.

The stumbling block to many is that they consider the standard as invariable—that because the price of gold is always the same, (being measured by itself,) therefore it must always be of the same value. A bushel of wheat is a fixed number of cubic inches, but this does not prevent the value of the bushel of wheat from varying, even though said bushel of wheat is made a dollar by law. 25% grains of standard gold is called a dollar by law, but this does not prevent the dollar from varying in value.

The simple fact is that gold (a product of labor) is a commodity, and is subject to the laws of supply and demand, the

same as any other commodity. Wheat is exchanged for gold, or gold is exchanged for wheat. It is recognized that the quantity of stock of wheat has an effect on the ratio of such an exchange, but it is strange that it is not so well perceived that the quantity of gold has a bearing on the ratio of the same exchange. If the gold is then instantly exchanged for iron, the double transaction is equivalent to a direct exchange of the wheat for the iron. The holding of the gold for a longer or shorter time, or even only a theoretical possession of it, makes no difference in the principles involved.

When the laws of supply and demand are spoken of, it should be noted that the meaning is not supply alone, but demand as well as supply, that is, both conjointly. This may be made clearer by an illustration.

The supply of lumber in a certain district might be doubled. We would ordinarily expect its price to fall. But a very large demand for it (arising from a fire or other causes) might even make its price advance. On the other hand, the price might decline with a very small supply of lumber, due, say, to a general building of brick in place of frame buildings.

The same idea applies to all products of labor (including silver, and even gold), and though the relative value or price of anything might appear, at first sight, to move in the opposite direction to what the supply would indicate, a careful examination will always show that the law of demand and supply is confirmed.

That the supply of gold has been comparatively inade-

quate to meet all the demands for it, is shown by its gradually increasing purchasing power, with its large production, while the cost of producing it has been lessening.

Silver has been partly demonetized as primary money. This has increased the demand for gold as a primary money, the foundation for the non-valuable mechanisms of exchange.

If the plan of demonetizing silver is continued, and at a faster rate than its place is supplied from the increasing gold production, it is reasonable to expect lower prices, and more of the undesirable experiences similar to those of the past quarter of a century. It would appear that the quantity of monetary metals has an effect on price levels, but not in proportion to the quantities.

When marked changes take place in the level of prices, the question arises whether the standard has changed (appreciated or depreciated) in value, or whether the change is in the commodities. It might be that both the standard and commodities changed at the same time, one appreciating and the other depreciating. It appears clear that the flood of gold during 1851-1854 caused it to depreciate.

Some contend that the fall in prices since 1873 is due to the appreciation of gold, caused by the very large demands for it for use in the arts and for money. Others claim that the fall in prices is due to the depreciation or cheapening of commodities. As we have no ideal standard of value, it may be impossible to determine how much the fall in prices has been due to each of these causes.

It may be more scientific to consider that commodities have depreciated in value from an undetermined ideal standard. Why is it, then, that gold (though its cost has been materially lessened) has not also depreciated in value?

There has been an ample margin (probably as much as \$10 per ounce, or fully its cost) for it to depreciate. Commodities (except gold), have had to be sold close to their cost prices, because they are supplied in ample quantity for the demands. But gold has been scarce, compared with the demands for it, and having no competition to meet, has not been compelled to have its selling price (in commodities) brought close to its cost.

Both commodities and gold might depreciate from an ideal standard, (possibly a standard having some close relation to human effort,) and yet the general price level remain quite constant.

There appears to be a widespread misconception as to the meaning of "Standard" as applied to gold. A standard clock for a railroad is one that all the employees of the road must go by. It is necessary that all the movements of the road must be governed by this standard clock. As a matter of fact, it may keep very poor time. It may be more irregular in its running than many watches on the road, yet they must be kept in accord with the standard clock. A better standard clock for keeping uniform time might be devised, if two or more clocks could all be made to actuate, with yielding connections, a single standard dial. Such a standard would not agree with

any of the elementary clocks, and yet have less of the irregularity of each.

The same idea is to be found in a theoretical alloy of gold and silver.

It is not always easy to show that gold does fluctuate, but the Black Friday corner is an illustration.

PRICES IN GREENBACKS.

1869.		GOLD, NEW YORK.		No. 2 SPRING WHEAT, CHICAGO.
Sept. 14,	-	\$1.36	-	\$1.23½
Sept. 18,	-	1.36½	-	1.20
Sept. 21,	-	1.37½	-	1.18
Sept. 23,	-	1.42	-	1.17
Black Friday, Sept. 24,	1.50	-	-	1.17
		1.34½	-	1.15
Sept. 25,	-	1.32½, 1.35	-	1.14
Sept. 28,	-	1.29	-	1.09
Oct. 2,	-	1.30%	-	1.07
Oct. 7,	-	1.31	-	1.05

If Black Friday had been in war times, the appreciation in gold might be attributed to a depreciation of the greenbacks. We see that gold (compared with greenbacks) was generally, —excepting September 23 and 24—on the decline; that wheat

was declining quite uniformly, undisturbed by Black Friday. If greenbacks had depreciated at that time, it should have been shown in a higher price for wheat. It appears that greenbacks were really appreciating during that period.

It is said that if this country needs more gold, it should be drawn from the markets of the world. That is just what other countries are saying. All are tugging at the gold blanket. This results in lower prices for commodities, each country preferring to part with its goods, rather than with its gold.

It is well known that there is a very much larger weight of silver in the world to-day than there was in 1870. But all this silver is not worth as much in gold, as the very much smaller amount of silver in the world in 1870 was worth in gold. This may be of interest to any one who makes a study of the effect on prices, due to a change of quantity and of demand.

EDWARD G. HEWITT.

Brooklyn, N. Y., January, 1898.

NOTE.—The latter part of the tables on pages 6 and 7, appear to be incorrect. It does not seem probable that the coinage stock was increased so much as 184 tons per annum, out of a total increase of 206 tons per annum.

The following article is essentially the same as appeared in
THE NEW YORK FINANCIER, August 30th, 1897.

WILL ONE BILLION GOLD BE AMPLE?

(Assumed World's Production for Four Years—1897-1900.)

By EDWARD G. HEWITT.

Some may think it needless to consider the above question, since it is well known that the production of gold has doubled during the past ten years.

1886	Production of World,	-	\$106,000,000
1896	Production of World,	-	210,000,000

The production of coal for the world during the last decade increased about 50 per cent.

Making moderate allowances for wear and losses, and assuming \$1,000,000,000 as the gold production for 1897-1900, the following table has been calculated:

RELATIVE STOCK OF GOLD PER CAPITA IN THE WORLD.

1850-1900 (including bullion, jewelry, &c.)
(1860 and later years compared with 1850. 1850 taken as 100.)

YEAR.	RELATIVE VALUES.	INCREASE EACH DECADE.
1850	- 100	
1860	- 137-	- 36.6 values or 36 $\frac{6}{10}$ %
1870	- 159+	- 22.7 " " 16 $\frac{6}{10}$ %
1880	- 174+	- 15.1 " " 9 $\frac{5}{10}$ %
1890	- 185	- 10.7 " " 6 $\frac{1}{10}$ %
1900	- 217-	- 31.6 " " 17 $\frac{1}{10}$ %

The foregoing table shows the slow increase of stock per capita between 1870 and 1890. It also shows that the present large increase is not proportionately large compared with 1850 to 1860.

It also shows that the stock of gold per capita in 1900 will be 2 $\frac{17}{100}$ times the stock of gold per capita in 1850; that is 217- : 100.

Mulhall's "Dictionary of Statistics," (page 306) gives value of stock of gold and silver in the world. This shows that the total of both for 1850 was 2% times that of gold alone.

WORLD'S GOLD PRODUCTION

IN METRIC

PRODUCTION.		USED FOR MONEY.		
YEARS.	TONS.	TONS.	Tons per annum.	Per Cent of Production.
1851-60	2006	1621	162	81 %
1861-70	1900	1023	102	54 %
1871-80	1732	774	77	45 %
1881-85	746	172	34	23 %
1886-90	849	250	50	30 %
1891-95	1254	600	120	48 %
1896-1900	1821	1000	200	55 %

MONETARY GOLD STOCK, &c.

TONS.

MONETARY GOLD STOCK.			
YEARS.	TONS.	Increase.	Increase per annum.
1850	1200		
1860	2821	135 %	say 11 %
1870	3844	36 %	" 3 1/10 %
1880	4618	20 %	" 2 %
1885	4790	4 %	" 8/10 %
1890	5040	5 %	" 1 %
1895	5640	12 %	" 2 1/10 %
1900	6640	18 %	" 3 6/10 %

Metric Ton of Gold = \$664,600.

The preceding table is based on Soetbeer's table to 1885 and on some conjectural estimates since 1885.

The table shows that the stock has usually increased several times as fast as population. During 1881-1885 the increase was less than that of population. Since 1890 the stock has increased two or three times as fast as the population. Does any one claim that there is too much gold to-day?

RELATIVE VALUE OF MONETARY STOCK PER CAPITA
IN THE WORLD.

(Silver omitted after 1870.)

	Gold, based on Soetbeer's Table.	Silver (Subsidiary deducted).	Total of Preceding Two Columns.	INCREASE IN VALUE.
1850	33+	67-	100	
1860	71+	67	138+	38 $\frac{4}{10}$ or 38 % for 10 yrs.
1870	88	70	158	19 $\frac{5}{10}$ or 14 % for 10 yrs.
1880	97-			
1885	95+			
1890	96-			
1895	102			6 $\frac{3}{10}$ or 61 $\frac{1}{2}$ % increase for 5 years.
1900	114 $\frac{1}{2}$			12 $\frac{5}{10}$ or 12 % increase for 5 years.

The 114 $\frac{1}{2}$ gold per capita for 1900 is 14 $\frac{1}{2}$ per cent more than the gold and silver per capita for 1850, and much less than 138 for both gold and silver per capita for 1860.

The preceding table shows that the present monetary stock of gold per capita is somewhat more than the monetary stock of both gold and silver per capita (omitting subsidiary silver) in 1850.

Observe how notably less the monetary gold per capita in 1900 will be, compared with the monetary gold and silver per capita in 1870, and then consider what chance there can be of dispensing with all the monetary silver of the world in or before 1900 without revolutionary changes.

It appears that there will not be as much monetary gold in 1900, as there was monetary gold and silver (in value) in 1870, saying nothing of the one-third increase of population, etc., between 1870 and 1900.

The increase of metallic monetary stocks (omitting subsidiary silver) was as follows:

1850-1860—Five times as fast as increase of population. This evidently was much more than a normal rate of increase.

1860-1870—Two and one-half times as fast as increase of population.

Mulhall (page 309) gives world's stock as follows:

Coined Gold, 1848,	-	-	-	£157,000,000
Coined Silver, 1848,	-	-	-	£388,000,000
				£545,000,000
*Coined Gold, 1890,	-	-	-	£790,000,000

* This is considerably more than Soetbeer's table would make it.

This shows that coined gold in 1890 was 45 per cent. more than coined gold and silver in 1848, which is almost as fast as increase of population.

Since silver is but partly demonetized, it indicates that the metallic money requirements are greater than the increase of population.

Statistics show that the value of the gold and silver coin in 1848 was 37 per cent. of the total stock of both.

At the present time the stock of gold coin appears to be over 50 per cent. of the total gold stock. (Mulhall gives it as over 60 per cent. for 1890. Accuracy cannot be expected in estimates of stocks of coin, for no one can know how much coin is melted for use in the arts. This large increase in the percentage of the total gold stock used for monetary gold stock indicates the recent urgent demand for monetary gold.

The preceding general fact should be considered while studying the tables, in order to form a correct opinion as to whether the \$1,000,000,000 gold will be ample.

Some six or eight years since, a banker stated that there was gold enough for money without using silver, except for change. It has also been claimed that in consequence of the greater use of checks, Clearing Houses, etc., there is not now the need for as much gold and silver per capita as formerly.

If these views were sound, should there not be, at the present time, entirely too much gold, since the quantity of it per capita has been materially increasing? We do not hear even a suggestion that there is now a plethora of gold.

It is not denied that there has been an extension and improvement in the mechanism of exchange, but it is doubtful with how much effect on the amount of metallic money now

required as compared with 1850. Banks, paper money, checks, etc., were not unknown in 1850. It is recorded that as far back as 1839, checks to the extent of 93 per cent. were used in London.

Is it not significant that, during the recent period of large increase of production of gold, prices of commodities have materially declined? In London the market prices of forty-five articles were stationary—1889-1891—and have declined 14 per cent. during 1892-1895. This does not indicate too much gold under the circumstances. I am aware that there is more than one cause affecting prices. There may be good reason for some falling of prices, but the rapid and long-continued decline should invite investigation along new lines, since existing policies do not seem to afford the relief needed.

Attention is frequently called to the fact that the production of gold is largely increasing as proof that the pressure will soon be relieved. There is a cause for this large increase of production. How many stop to inquire what it is? It is readily found in the fact that the demand for gold is excessive, and that the business of producing it pays very handsomely.

Authorities state that the cost of producing gold is very materially less than formerly. The demand, however, is so strong that its value as compared with all other commodities is advancing. As long as the supply of an article is inadequate to the demand, the price can be maintained or advanced without regard to its cost. When the supply exceeds the demand, the price or relative value declines.

As long as the cost of labor and material required to produce gold does not increase, and the level of prices of commodities continues to remain stationary or declines, so long is it probable that the production of gold will increase. The

reason the production of gold does not increase still faster is the difficulty of finding and developing the mines.

If pig iron were the standard of value, and any such disparity existed between its cost of production and purchasing power as now exists in gold, there would be an enormous increase of production, and rapidity of increase, as fast as furnaces could be built and hands trained. This would compel the raising of the level of prices, as measured in pig iron, until the cost of the pig iron would be so increased (by the greater cost of supplies, etc., required for making) that its production would be checked, because it would cease to be profitable to produce.

The reason that this adjustment would be reached in less time than with gold, is because deposits of iron ore can readily be found to an unlimited extent.

Soon after 1850, when the stock of gold was rapidly rising, prices also rose rapidly and a large flow of silver started for Asia. She took from the Western World during 1831-1850 a yearly average of 230 tons of silver; during the following twenty years (1851-1870) the yearly average taken was 1,180 tons, five times the former quantity.

There are now decided manifestations of a wonderful industrial awakening in the East. Who can say how large will be its future requirements for the precious metals?

The increase of gold monetary stock was from 2,821 tons in 1860 to 5,640 tons in 1895—2,819 tons, or 100 per cent. This was 2½ times as much as the increase of population.

Mulhall gives on page 309 the stock of uncoined gold in the world:

1880	-	-	-	-	-	£357,000,000
1890	-	-	-	-	-	£445,000,000

This shows an increase of 24 per cent. A use for the arts and the East of more than twice as much as the increase of population.

WORLD'S STATISTICS 1890 COMPARED WITH 1850.

	Mulhall Page.	1890 more than 1850 per cent.
Population,	- - - - -	46 %
Coal, quantity	- - - 119	519 %
Pig Iron,	- - - 332	491 %
Commerce, value	- - - 128	306 %
Freights, quantity	- - 300	Over 1,000 %
Value of total stock of Gold and Silver,		92 %
Wealth, (United Kingdom, France and United States,	- - - - -	217 %

The preceding table shows that wealth has advanced more than four times, and activities six to ten times as much as population has increased.

The value of total stock of both gold and silver (taking 1 oz. gold—16 ounces silver at both dates) increased during the same period twice as fast as the population.

Population for all the tables in this article is assumed as having increased 10 per cent. for ten years, or 61 per cent. for fifty years.

Let us see what light the preceding tables and statements will throw on the question at head of this paper.

The total stock of gold per capita in 1850 is called 100. The total of precious metals in 1850 was $2\frac{1}{10}$ times as much as the gold alone; therefore $100 \times 2\frac{1}{10}$ (equal to 290) represents the value of the precious metals per capita in 1850 for both the arts and metallic money.

Is it not fair to assume that a larger amount than 290 per capita is needed at the present time? This would appear to be a very reasonable assumption, since wealth and activities have been shown to have advanced several times as much as the population. It would seem probable that a much higher figure than 290 should be assumed to represent the requirements of the present time.

The total stock of gold per capita for 1900 is represented by 217 (See table on page 19.) This is materially less than 290 for gold and silver per capita in 1850, and indicates a scarcity of gold in 1900 under present conditions, and if silver should be largely discarded as primary money.

On the assumption that coinage is always a constant percentage of the stocks of gold and of silver, these comparisons (viz.: 217 and 290) hold good for coinage alone, as well as for both coinage and arts.

It would, therefore, seem fair to conclude, if the world continues to demonetize silver, that the \$1,000,000,000 assumed production of gold 1897-1900 will not be ample, and that the activities and developments of the world may be checked, and that further adjustments will continue. Such ad-

justments being lower prices of commodities and larger production of gold.

The theory has been advanced that the very large economies resulting from labor-saving machinery, new processes, etc., account for the great decline in prices of commodities since 1873. I think that these economies do not necessarily and certainly reduce prices under all circumstances. I believe that the foregoing plausible theory as to the cause of the decline of prices is misleading and tends to confuse ideas. It has the appearance of being true—therein lies its harm. For its acceptance has prevented many from looking for the real cause of the rapidly falling prices.

Perhaps it would have been nearer right to have said that prices would be reduced if measured in terms of human labor. Prices of commodities are expressions of the quantities of that which is taken as the standard. The product of human labor taken as the standard is quite different from human labor itself.

Prices, measured in gold, advanced (in fact, bounded) 1851-1854, and somewhat more than held (on the average) such advance to 1873, but have been declining most of the time since 1873 except during the four years 1888-1891. If iron had been the standard, it might be that prices would have been nearly stationary or even have advanced most of the time since 1873, as measured in iron.

It is clear that the quantity of gold, compared with the requirements for it, is an important factor in prices.

Never (in our time) has there been as much gold, nor prices as low, as at the present time. This indicates that busi-

ness is on a large scale, and uses for gold so large that the supply is comparatively inadequate.

The fact is, gold has such a monopoly for use as primary money that its value compared with other merchandise is unduly increased. We thus have to pay more in commodities for pens and other articles made of gold, than we otherwise would have to do. Gold could be sold for at least 30 per cent. less than now (taking commodities as the standard) and yield the producers a profit. In case of such a decline, would not its use in the arts be materially increased? The cost of producing gold has been lessened by a low plane of prices, low transportation, and new processes. These conditions have greatly stimulated its production.

From hundreds of products of human labor, one of them is given exclusive money power to measure all the others by. Is there some hypnotic power connected with gold that makes people suppose that it alone is not governed by the same law that controls other metals and products, in their production, demand and supply?

Perhaps the standard of the future will be a single standard based on fixed quantities of gold, silver and any other products of labor (if any) that may be found to be practicable for the purpose. Such a basis for a standard would be (like a large reservoir) liable to less fluctuation than any one of its elements. Even though the tables had shown a much larger amount of gold per capita than they do, I think a broader consideration of the subject would show that it will be better for the progress and development of the world, that both gold and silver should jointly be used as primary metallic money.

SITUATION FOR 1897.

Total Stock of Gold, coined and uncoined,
say 11,200 tons.

Estimated production of Gold for 1897, \$240,000,000
equal to 361 tons.

After deducting for loss and for wear, the increase of total stock of gold for the year will be about 3 per cent. This increase is, say, three times that of the population.

The preceding tables will show that there has been an increase for the arts and for monetary gold during recent years, of fully twice that of the population. Though the present production of gold is large, it evidently is not large enough to warrant the further replacing of the monetary silver on any large scale (rapidly), if we would avoid disturbances and adjustments.

With the largest known production of gold, it is to-day comparatively scarce and high. Should the policy of demonetizing silver be actively continued, the prospect is that even the stimulated production of \$1,000,000,000 will not be ample; and gold will become comparatively scarcer and higher, a still lower level of general prices be probable, and the progress of the world hampered.

The foundation for paper money should be adequate.

Before closing I will mention an interesting fact, viz.: that the weight of silver in the world per capita at the present time is less than it was in 1810. This may appear almost incredible to many. Another fact is, that the value of total gold and silver in 1897 is not over 20 per cent. more per capita than it was in 1810, taking 1 oz. gold equal to 16 oz. silver at both dates. A corresponding comparison with 1850 (when there was a dearth of gold and silver) shows about 44 per cent. more per capita in 1897.

All tangible wealth increased during 1850-1890 much faster than the total stock of gold and silver increased.

The census recently taken in Russia is reported as showing that the population of that country has doubled during the past forty-five years.

The rate of increase used in the tables of this paper is about seventy-two years for the doubling of the population. The value of all the gold and silver in the world has somewhat more than doubled during the past forty-five years—taking 1 oz. gold equal to 16 ozs. silver.

Will the people of the world remain satisfied with the unsupported assertion that "there is gold enough for money," made by those who neither appear to appreciate the growth and needs of the world, nor seem willing to investigate the subject?

I am willing to show all data on which this article is based. Should any material error be found, or any factor of importance (that can be measured) overlooked, I would be glad to be advised of it.

Brocklyn, N. Y., August, 1897.

FALLING PRICES
SHOULD INCITE US
TO
STUDY THE FACTS.

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**END OF
TITLE**